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SMT15F Series 12 Vin single fixed output

Total Power: 15.0 W
Input Voltage: 10.8-13.2 Vdc
of Outputs: Single



Special Features

- Designed to meet ultra fast transient requirements: 300 A/µs step load transients
- 15 A Current rating
- Input voltage range: 10.8 Vdc to 13.2 Vdc
- Output voltage range: 1.0 Vdc to 1.8 Vdc
- Extremely low internal power dissipation
- Minimal thermal design concerns
- Ideal solution where board space is at a premium or tighter card pitch is required
- Industry standard surface-mount footprint
- Available RoHS compliant
- 2 year warranty

Safety

UL/cUL CAN/CSA 22.2 No. E174104 UL 60950 File No. E174104

TÜV Product Service (EN60950) Certificate No. B 04 04 38572

CB report and certificate to IEC60950 DE3-52484

The SMT15F-12 series are non-isolated dc-dc converters packaged in a surface-mount footprint giving designers a cost effective solution for conversion from a 12 V source. The SMT15F-12 has an input range of 10.8 Vdc to 13.2 Vdc and offers an output voltage range from 1.0 Vdc to 1.8 Vdc with a 15 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SMT15F-12 is designed for applications that include distributed power, workstations, optical network and wireless applications. Implemented using state of the art surface-mount technology and automated manufacturing techniques, the SMT15F-12 offers compact size and efficiencies of up to 88% at 1.8 Vout.





Specifications

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All specifications are typical at nominal input, full load at 25°C unless otherwise stated.

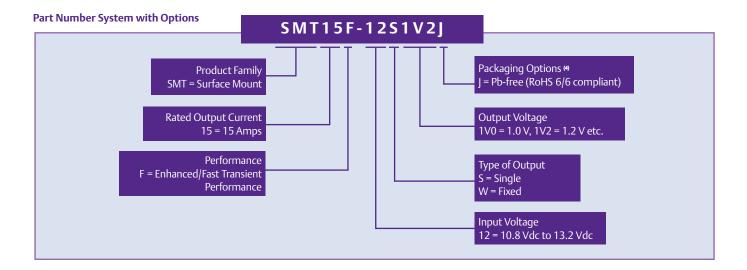
Voltage adjustability (Trimmable) ±10% Setpoint accuracy ±2.5% typ. Line regulation ±1.0% typ. Load regulation ±1.0% typ. Total error band ±3.0% typ. Minimum load 0 A Overshoot/undershoot None Setpoint accuracy ±2.5% typ. Electrostatic discharge Conducted immunity EN61000-4-2, IEC801-2 EN61000-4-1 EN61000-4-2 IEC801-2 EN61000-4-2 IEC801-2 EN61000-4-2 IEC801-2 EN61000-4-3 EN61000-4-2 IEC801-2 EN61000-4-3 EN61000-4-2 IEC801-2 EN61000-4-3 EN61000-4-2 IEC801-2 EN61000-4-3 EN61000-4-2 IEC801-2 EN61000-4-5
Line regulation ±1.0% typ. Load regulation ±1.0% typ. Total error band ±3.0% typ. Minimum load Overshoot/undershoot EM61000-4-3 ERAdiated immunity EN61000-4-3 EFficiency Vin = 12 V, Vout = 1.8 V Switching frequency Vin = 12 V, Vout = 1.2 V Vin = 12 V, Vout = 1.2 V
Line regulation $\pm 1.0\%$ typ.Load regulation $\pm 1.0\%$ typ.Total error band $\pm 3.0\%$ typ.Minimum load0 AOvershoot/undershootNoneSwitching frequency Vin = 12 V, Vout = 1.2 V
Load regulation $\pm 1.0\%$ typ. Total error band $\pm 3.0\%$ typ. Minimum load $\pm 3.0\%$ typ. More shoot/undershoot $\pm 3.0\%$ typ. None Switching frequency $\pm 3.0\%$ typ. Switching frequency $\pm 3.0\%$ typ. Switching frequency $\pm 3.0\%$ typ. The showth $\pm 3.0\%$ typ. Switching frequency $\pm 3.0\%$ typ. The showth $\pm 3.0\%$ typ. The showth $\pm 3.0\%$ typ. Switching frequency $\pm 3.0\%$ typ. The showth $\pm 3.0\%$ typ. Switching frequency $\pm 3.0\%$ typ. The showth
Total error band ±3.0% typ. Minimum load 0 A Overshoot/undershoot None Switching frequency Variable 700 kHz trong 12 V, Vout = 1.2 V
Overshoot/undershoot None Switching frequency Variable 700 kHz to Vin = 12 V, Vout = 1.2 V
Overshoot/undershoot None Vin = 12 V, Vout = 1.2 V
Pinnle and noise Filate 20 Mila 40 m)/ nk nk
Ripple and noise 5 Hz to 20 MHz 40 mV pk-pk 25 mV rms Approvals and standards UL/cUL609
Temperature co-efficient $\pm 0.01\%$ Material flammability UL94V
Transient response di/dt 200 A/μs 7.5 A load step (1.2 Vout) (See Note 3) 50 mV max. deviation <10 μs recovery to
within $\pm 1.0\%$ Weight 7 g (0.25)
Remote sense 10% Vo compensation Coplanarity 100 p
INPUT SPECIFICATIONS MTBF Telcordia SR-332 16,529,000 hor
Input voltage range 10.8 Vdc to 13.2 Vdc ENVIRONMENTAL SPECIFICATIONS
Input current No load 100 mA Thermal performance Operating ambient, -40 °C to +85
Input current (max.) 2.0 A max. @ Io max. and Vout = 1. 2 V (See Figure 1) temperature Non-operating -40 °C to +125
Input reflected ripple 100 mA rms PROTECTION
Remote ON/OFF (See Note 1) Short-circuit Continuo
Start-up time 5 ms Thermal Automatic recover

Specifications

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All specifications are typical at nominal input, full load at 25°C unless otherwise stated.

OUTPUT POWER	INPUT	OUTPUT	OUTPUT CURRENT	OUTPUT CURRENT	EFFICIENCY	REGULATION		MODEL
(MAX.)	VOLTAGE	VOLTAGE	(MIN.)	(MAX.)	(TYP.)	LINE	LOAD	NUMBER (1.4.5)
15.0 W	10.8-13.2 Vdc	1 Vdc	0 A	15 A	85%	±1.0%	±1.0%	SMT15F-12S1V0J
18.0 W	10.8-13.2 Vdc	1.2 Vdc	0 A	15 A	86%	±1.0%	±1.0%	SMT15F-12S1V2J
22.5 W	10.8-13.2 Vdc	1.5 Vdc	0 A	15 A	87%	±1.0%	±1.0%	SMT15F-12S1V5J
27.0 W	10.8-13.2 Vdc	1.8 Vdc	0 A	15 A	88%	±1.0%	±1.0%	SMT15F-12S1V8J



Notes

1 The SMT15F-12 features an 'Active High' Remote ON/OFF operation. If not using the Remote ON/OFF pin, leave the pin open (the converter will be on). The Remote ON/OFF pin is referenced to ground.

The following conditions apply for the SMT15F-12:

ConfigurationConverter OperationRemote pin open circuitUnit is ONRemote pin pulled lowUnit is OFFRemote pin pulled highUnit is ON

An 'Active Low' Remote ON/OFF version is also possible with this converter. To order please place the Suffix 'R' towards the end of the part number, e.g. SMT15F-12S1V8RJ.

- A 270 μF electrolytic input capacitor maybe required for test purposes only.
 An external output capacitor is not required for basic operation. Adding distributed capacitance at the load will improve the transient response.
- 4 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 5 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at http://www.artesyn.com/powergroup/products.htm to find a suitable alternative.

Specifications

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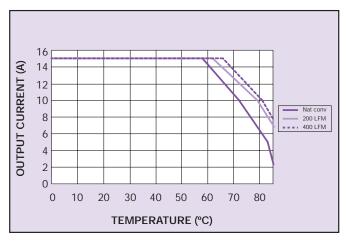


Figure 1 - Derating Curve
Vin = 12 V, Output Voltage = 1.2 V (See Note A)

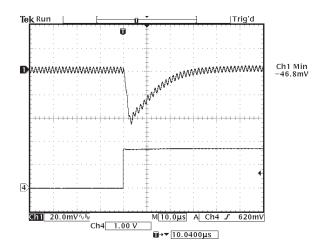


Figure 3 - Typical Transient Response, (Vin = 12 V, Output Current = 1.2 V), 7.5 A Load Step Change; Slew Rate = 200 A/µsChannel 1: Voltage Deviation = 46.8 mV; Recovery Time = 10 µs

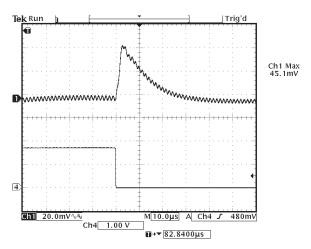


Figure 2 - Typical Transient Response, (Vin = 12 V, Output Current = 1.2 V), 7.5 A Load Step Change; Slew Rate = 200 A/ μ s Channel 1: Voltage Deviation = 45 mV; Recovery Time = 10 μ s

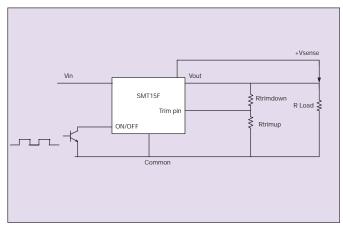


Figure 4 - Standard Application

Notes

A The derating curve represents the conditions at which internal components are within the Artesyn derating guidelines.

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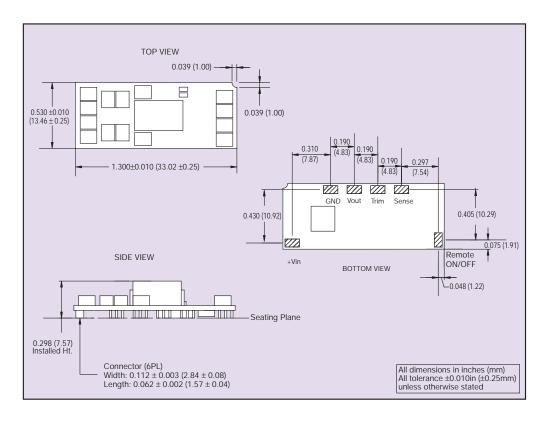


Figure 5 - Mechanical Drawing

PIN CONNECTIONS					
PIN NUMBER	FUNCTION				
1	+Vin				
2	GND				
3	+Vout				
4	Trim				
5	+Vsense				
6	Remote ON/OFF				

Figure 5 - Mechanical Drawing and Pinout Table

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